

CLAIMS

1. A method for manufacturing a circuit board, comprising the steps of:
forming a resin film on an insulating substrate, thereafter
exposing and developing said resin film,
heat-hardening said resin film, and
exposing said resin film to a fluorine gas atmosphere after drying said
resin film.
2. A method for manufacturing a circuit board, comprising the steps of:
forming a resin film on an insulating substrate,
exposing and developing said resin film,
heat-hardening said resin film,
drying said resin film, and thereafter
exposing said resin film to a fluorine gas atmosphere.
3. A method for manufacturing a circuit board, comprising the steps of:
forming a resin film on an insulating substrate,
exposing and developing said resin film,
drying said resin film,
exposing said resin film to a fluorine gas atmosphere, and thereafter
heat-hardening said resin film.
4. A method for manufacturing a circuit board, comprising the steps of:
forming a resin film on an insulating substrate,
heat-hardening said resin film,
drying said resin film,
exposing said resin film to a fluorine gas atmosphere, and
exposing and developing said resin film.
5. The method for manufacturing a circuit board according to claim 1,
wherein:

the water content in said resin film is 1 wt% or less after the drying step.

6. The method for manufacturing a circuit board according to claim 1, wherein:

the water concentration in the fluorine gas atmosphere is 100 wt ppm or less.

7. The method for manufacturing a circuit board according to claim 1, wherein:

the step of heat-hardening said resin film is carried out in an inert gas atmosphere.

8. The method for manufacturing a circuit board according to claim 1, wherein:

said resin film is subjected to ultraviolet irradiation at atmospheric pressure before the step of exposing said resin film to the fluorine gas atmosphere.

9. The method for manufacturing a circuit board according to claim 1, further comprising the step of:

applying oxygen plasma treatment to said resin film at normal pressure or reduced pressure before the step of exposing said resin film to the fluorine gas atmosphere.

10. The method for manufacturing a circuit board according to claim 1, further comprising the step of:

contacting said insulating substrate with a hydrofluoric acid-based chemical solution after the step of exposing said resin film to the fluorine gas atmosphere.

11. The method for manufacturing a circuit board according to claim 10, wherein:

the hydrofluoric acid-based chemical solution is a hydrofluoric acid aqueous solution having a hydrofluoric acid concentration of 0.1 wt% to 50 wt%.

12. The method for manufacturing a circuit board according to claim 10, wherein:

the hydrofluoric acid-based chemical solution contains one or more kinds of chemicals selected from the group consisting of inorganic acids, fluoride salts, and surfactants.

13. The method for manufacturing a circuit board according to claim 1, further comprising the step of:

filling a conductive material in a concave portion formed by development of said resin film to form electrical wiring.

14. The method for manufacturing a circuit board according to claim 13, wherein:

filling of the conductive material is carried out by any one of a plating method and a printing method.

15. The method for manufacturing a circuit board according to claim 14, wherein:

the printing method is inkjet printing or screen printing.

16. The method for manufacturing a circuit board according to claim 1, wherein:

said resin film and said electrical wiring form substantially the same plane.

17. The method for manufacturing a circuit board according to claim 1, wherein:

said insulating substrate is a glass substrate or a silicon wafer.

18. The method for manufacturing a circuit board according to claim 13, wherein:

the conductive material comprises an organic substance.

19. The method for manufacturing a circuit board according to claim 1, wherein:

said resin film is made from a photosensitive resin composition comprising an alkali-soluble alicyclic olefin resin and a radiation-sensitive component.

20. The method for manufacturing a circuit board according to claim 1, wherein:

said resin film comprises one or more kinds of resins selected from the group consisting of an acrylic resin, a silicone resin, a fluorine resin, a polyimide resin, a polyolefin resin, an alicyclic olefin resin, and an epoxy resin.

21. A circuit board obtainable by the method as defined in claim 1.

22. A display device comprising the circuit board as defined in claim 21.

23. The display device according to claim 22, wherein:

said display device is a liquid crystal display device, an organic EL display device, or a plasma address display device.